

Standards of Public Land Health

Evaluation of 64029 WILL JOHNSON TANK Allotment

[11/30/2006]

The Roswell Field Office conducted (RHA) Rangeland Health Assessments at 8 study sites within Will Johnson Tank, allotment #64029. These assessments evaluated Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of these field assessments. A summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64029-ARROYO-E205	X			X			N/A		
64029-GRANDE-E206	X			X			N/A		
64029-MARE-E204	X			X			N/A		
64029-NORTH MILL-E207	X			X			N/A		
64029-SANDHILLS #1-F278	X			X			N/A		
64029-SANDHILLS #2-F303	X			X			N/A		
64029-SW-F279	X			X			N/A		
64029-WILL JOHNSON-E202	X	*		X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on Will Johnson Tank, allotment #64029. Ten of these assessed soil site stability; 11 hydrologic function; and 13 biotic integrity. These qualitative assessments in conjunction with quantitative information gathered from previous data collected on 8 trend plot locations within this allotment were utilized to make rangeland health determinations. Quantitative evaluations are performed by the Roswell Field Office, which include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition. These collections, which were initiated in the late 1970's/early 1980's, are scheduled and conducted approximately every 5 years.

There are eight study sites on this allotment. All were visited between March 21, 2007 and April 20, 2007. Four sites are Loamy CP-2; three are Very Shallow CP-4; and one is a Shallow CP-2. The allotment contains ten pastures (two are traps) with study sites in seven. Buckhorn pasture does not have a study site, and Sandhills pasture contains two study sites. These sites are intended to serve as key areas for the pastures and provide an indication of rangeland health for the pastures and for the allotment.

Soil is relatively stable throughout this allotment. No significant departures were identified at any of the study sites. Pedestalling was apparent at seven of the sites. Four sites showed a "moderate" departure from the respective ESDs which meant that active pedestalling was occurring. Gullies were noted at several of the study sites and were associated with a road or cow trails.

Hydrologic function was similar to Soil Stability. In general, herbaceous ground cover was either near or exceeded expected values. Several areas, however, are trending toward a "moderate" departure from the ESD due to changes in herbaceous ground cover.

Biotic integrity remains adequate throughout the allotment; however, all areas show a change in vegetative composition from that expected in the respective ESD. In most cases, desirable forage grasses have been reduced. Some areas show an increase in the shrub component. Invasive plants are not a significant problem on the allotment. Cholla is the most notable invasive plant. Broom snakeweed is generally higher than expected throughout the allotment.

The allotment is used by cattle. Grazing use was noted in Mare, Will Johnson, Arroyo, and Grande pastures. In these pastures, overall use was generally light at the time of the visit, but use on desirable grasses such as black grama and blue grama was typically moderate to heavy.

The entire allotment appears to be suitable habitat for mule deer and for pronghorn where they would be expected.

The following discussion is a site by site, pasture by pasture evaluation.

Arroyo pasture with its study site was visited on April 19, 2007. This pasture contains approximately 2165 acres. Roughly one-third is private land. The site representing this pasture is located near the center of the pasture on public land and is within a Very Shallow CP-4 ecosite. According to GIS, most of this pasture is comprised of Very Shallow CP-4 with smaller amounts of Loamy CP-2. Most of the pasture contains gently sloping, undulating terrain ranging from approximately 4100 to 4300 feet elevation. Middle Arroyo passes through the pasture. Cattle were in the pasture at the time of the visit, but use was slight to none at the study site.

Soil is very stable in the vicinity of the study site with little evidence of erosion. All soil stability indicators rated either "slight to moderate" or "none to slight". Some soil loss has occurred as indicated by pedestalling, which was mostly limited to water flow patterns.

Hydrologic function was near what is expected for the site, but the increase in snakeweed may be affecting infiltration and runoff. Herbaceous cover was somewhat less than expected for the ecosite.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite. The site has many attributes of a Loamy site as indicated by the dominance of tobosa grass. For a Very Shallow site, tobosa is not listed as one of the grasses occurring on the ecosite. There has been a shift in composition throughout this area. Black grama is significantly reduced from expected. Snakeweed has increased over expected and tobosa grass dominates the composition. The habitat is satisfactory for mule deer.

Grande pasture with its study site was visited on April 19, 2007. This pasture contains approximately 2673 acres. Most of the pasture is public land; approximately one-fifth is private land. The site representing this pasture is located near the center of the pasture and is within a Very Shallow CP-4 ecosite. According to GIS, most of this pasture is comprised of a Very Shallow CP-4 with a smaller amount of Limestone Hills CP-4. Most of the pasture contains gently sloping, undulating terrain ranging from approximately 4100 to 4500 feet elevation. Cattle were in the pasture at the time of the visit. Grazing use on black grama had been heavy.

Soil is relatively stable in the vicinity of the study site; however, there is evidence of erosion. All soil stability indicators rated either "slight to moderate" or "none to slight", but some are trending toward "moderate". Soil loss has occurred as indicated by pedestalling, which was most notable in shrubby areas.

Hydrologic function was rated similarly. The increase in shrubs has contributed to a slight departure from the ESD relating to infiltration and runoff. Herbaceous ground cover was somewhat less than expected in the ESD.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite. Shrubs (snakeweed and catclaw) are increasing on the site. There has been a shift in the composition of grasses. Threeawns are the dominant grasses. Black grama is a co-dominant. The habitat is satisfactory for mule deer.

Mare pasture with its study site was visited on April 19, 2007. This pasture contains approximately 1083 acres. About 60% of the pasture is state land; 36% is public land; and 4% is private land. The site representing this pasture is located near the center of the pasture and is within a Very Shallow CP-4 ecosite. According to GIS, the pasture contains a mixture of ecosites that include Very Shallow CP-4, Limestone Hills CP-4, and Loamy CP-2. Most of the pasture contains gently sloping, undulating terrain ranging from approximately 4100 to 4250 feet elevation. The pasture is drained by Middle Arroyo and Salt Creek. Cattle were in the pasture at the time of the visit. There was moderate to heavy use on black grama and light use on other forage plants. Trailing was present in the vicinity of the study plot.

There is some decline in soil stability as indicated by the presence of flow patterns and the "moderate" pedestalling. Several indicators for soil stability and hydrologic function were trending toward "moderate". There is an increase in snakeweed over what is expected for the site. This may be affecting infiltration and runoff. The area is well armored by surface rock.

In addition to the increase in shrubs and half shrubs, there has been a shift in composition in grasses. The area is becoming a threeawn / *Tridens* grassland instead of a black grama dominated grassland. The area is satisfactory for mule deer.

North Mill pasture with its study site was visited on April 19, 2007. This pasture contains approximately 2295 acres. Approximately 67% of the pasture is public land; 33% is state land; and 7% is private land. The site representing this pasture is located on state land near the center of the pasture and is within a Loamy CP-2 ecosite. According to GIS, other ecosites within the pasture include Limestone Hills CP-4 and Very Shallow CP-4. Most of the pasture contains gently sloping, undulating terrain ranging from approximately 4200 to 4400 feet elevation. Middle Arroyo passes through the southern part of the pasture. Cattle were not observed in the pasture, but there had been light grazing use on black grama. Cattle trails were evident between water sources.

Soil remains relatively stable, but there has been loss as indicated by the presence of flow patterns and the "moderate" pedestalling. Gullies are beginning to form in association with cow trails. These are uncommon but are unstable.

Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected due to the thick Tobosa grass cover. Litter amount was near expected.

Most indicators assessing biotic integrity for the site fell into "slight to moderate" or "none to slight". Functional / Structural Groups rated "moderate" because the area is heavily dominated by tobosa grass with a significant reduction of various grama grasses. Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite. Cholla are widely scattered throughout the site. The area provides suitable habitat for pronghorn and mule deer.

The Sandhills pasture has two study sites, #1 and #2 that were visited on April 20, 2007. This pasture contains approximately 1078 acres and has a mixture of public, private and state land. Site #1 is located on private land; site #2 is located on public land. Each is within a Loamy CP-2 ecosite. According to GIS, other ecosites within the pasture include Very Shallow CP-4, Shallow CP-2, and Sandhills CP-2. The pasture contains gently sloping, undulating terrain ranging from approximately 4100 to 4260 feet elevation. Salt Creek runs through the south half of the pasture. A tributary to Salt Creek runs through the north half. Cattle were in the pasture at the time of the visit. Grazing use was light and mostly on blue grama.

Soils are relatively stable in the vicinity of study site 64029-SANDHILLS #1-F278; however, there is evidence of erosion. All soil stability indicators rated either "slight to moderate" or "none to slight". Some soil loss has occurred as indicated by pedestalling.

Hydrologic function was rated similarly. Herbaceous ground cover was near what is expected for the site, but occasional bare areas are having a slight effect on runoff and infiltration.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite (60 - 80% of potential). The area has some characteristics of a bottomland site. Tobosa grass is much less than expected for a loamy site. Blue grama is the dominant grass. Cholla on the site are probably associated with an old sheep bedding ground. The area is suitable for pronghorn and mule deer.

Soil is also relatively stable at site 64029-SANDHILLS #2-F303. All soil stability indicators rated either "slight to moderate" or "none to slight", however, Water Flow Patterns and Pedestalling are trending toward a "moderate" rating. There has been some soil loss as indicated by pedestalling. Bare ground is slightly less than expected for the site, but the average bare ground values (from the data) are higher than expected. There are no gullies on the site, but there is active erosion in the adjacent draw bottom that is associated with an old road. Hydrologic function was rated similarly. Herbaceous ground cover is somewhat higher than expected in the ESD.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite (>80% of potential). There has been a shift in the composition of grasses compared to the ESD. Tobosa grass is the dominant grass. Blue grama and black grama are still well represented in the composition. The area is suitable for pronghorn and mule deer. Southwest pasture with its study site was visited on April 19, 2007. This pasture contains approximately 998 acres with a mixture of public, state, and private land. The majority of the pasture is public land. The site representing this pasture is located on public land in the south half of the pasture and is within a Shallow Cool CP-2 ecosite. According to GIS, other ecosites within the pasture include Shallow Sand CP-2, Very Shallow CP-4, and mixtures of Sandy Plains CP-2 and Loamy CP-2. This study site appears to have Loamy CP-2 mixed with it. The pasture contains gently sloping, undulating terrain ranging from approximately 4200 to 4330 feet elevation. Some grazing use was evident at the time of the visit. Sideoats grama and New Mexico feathergrass were moderately to heavily grazed. Cattle trails were evident through the site.

Soil remains relatively stable, but there has been soil loss as indicated by the presence of flow patterns and the "moderate" pedestalling. There is some active rill formation due to cow trails that are beginning to form gullies. Bare ground is about what is expected for the site. Mini terracettes are forming in some of the flow patterns. Biotic crusts are generally limited to protected areas. The site appears to be recovering from severe drought. Erosion will continue as the site recovers.

Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected for the site.

Indicators assessing biotic integrity for the site all fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006, making the annual production relatively high compared to the production potential for the ecosite (>80% of potential). Shrubs and half shrubs are more common than expected in the ESD. Snakeweed has increased substantially on the site. Beargrass (*Nolina* spp.) is also increasing. Some decadence was observed in threeawns. The area is suitable for pronghorn and mule deer. Will Johnson pasture with its study site was visited on March 21, 2007. This pasture contains approximately 4843 acres with a mixture of public and private land. The study site representing this pasture is located on public land near the center of the pasture. It is within a Loamy CP-2 ecosite. According to GIS, most of the pasture consists of a Very Shallow CP-4 ecosite with lesser amounts of Limestone Hills CP-4 and Loamy CP-2. The pasture contains gently to moderately sloping, undulating terrain ranging from approximately 4160 to near 4500 feet elevation. Rock Tank Canyon bisects the pasture. Some grazing use was evident at the time of the visit and was primarily on black grama. There is no longer road access to this site. The old road is now a gully.

Soil remains relatively stable, but soil loss through sheet erosion is evident by the amount of pedestalling, which rated "moderate". Bare ground is within the expected range but is approaching the high end. Soil surface resistance to erosion appears to be moving to a "moderate" departure from the ESD. There are no rills or gullies at the site, but an old road leading to the site has formed an active gully.

Hydrologic function was rated similarly. Herbaceous ground cover was near what is expected in the ESD. Bare areas are contributing to increased runoff and reduced infiltration.

Most indicators assessing biotic integrity for the site fell into "slight to moderate" or "none to slight". Late growing season precipitation was greater than normal in 2006. Even so, this site only produced 40 - 60% of potential for a Loamy CP-2. (This site has characteristics of a Shallow CP-4, which would have a lower potential production). Species diversity is still relatively good, but the area is no longer dominated by blue and black grama as expected for the site. Threeawns are about equal to gramas in the composition and burrograss appears to be increasing. The area is suitable habitat for pronghorn and mule deer.

It is the professional opinion of the Assessment Team, public land within Will Johnson Tank, allotment #64029 meets Upland and Biotic Standards. There are no Riparian issues present therefore this standard was not addressed. See site notes, comments and recommendations for further information regarding this assessment.

Recommendations: All study sites show a shift in composition within the grass community. For those areas where tobosa grass dominates, consider prescribed burning or other disturbance (i.e. herd effect) followed by appropriate rest to improve vegetative diversity. For all sites, consider alternating or changing the timing and duration of grazing to allow desirable forage plants to re-establish and reproduce.

Gullies are mostly associated with roads and cow trails. Some roads passing through the allotment have resulted in accelerated runoff into local drainages. There is active cutting

occurring. All the roads within this allotment should be evaluated for this condition and corrective measures taken.

RFOs Upland and Biotic Standard Assessment Summary Worksheet						
SITE 64029-ARROYO-E205						
Legal Land Desc	SWSW 14 0080S 0210E Meridian 23	Acreage		1380		
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken		Y		
Watershed	13060005060 MIDDLE					
Observers	JACKSON; DILLEY	Observation Date		04/19/2007		
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad				
Soil Map Unit	EaC	Soil Taxon Name		ECTOR		
Texture Class	NM644 CBV-L	Soil Phase		ECTOR		
Texture Modifier	NM644 VERY COBBLY LOAM					
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation				
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation		8.18		
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation		8.01		
Disturbances and Animal Use:	Cattle are in the pasture but not near the study site. There was no apparent use in the immediate vicinity of the study site.					
Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Flow patterns and short and stable.					
S H	Pedestals and/or Terracettes					X
Comments:	Past formation of pedestalls is evident in places.					
S H	Bare Ground					X

Comments:	Less than expected for the site.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Some movement in flow patterns.					
S H B	Soil Surface Resistance to Erosion					X
Comments:	High aggregate stability.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Based on old pedestalls.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Snakeweed is higher than expected for the site which may be having a minor affect on infiltration. Herbaceous ground cover is somewhat less than expected.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	The site has a Loamy site character to it, hence the abundance of tobosa grass, which is the dominant grass. Snakeweed has increased over expected amounts. Black grama is still significant in the composition, but is greatly reduced from expected.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Litter exceeds expected levels.					
B	Annual Production					X
Comments:	Greater than 80% of potential. Good late summer rains in 2006.					
B	Invasive Plants				X	
Comments:	Based on the increase in snakeweed.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Grasses were able to produce seed in 2006. The reduction of desirable grasses in the composition may be due to the timing, duration, and intensity of grazing over time.					

S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	2	8
H	Hydrologic	0	0	0	4	7
B	Biotic	0	0	0	4	9

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are stable. Most indicators rate "none to slight". There is little evident of soil movement.	0	0	10
Hydrologic		0	0	11
Biotic	Most indicators rate "none to slight". Biotic integrity is good, but there is a shift in composition from expected.	0	0	13

Site Notes: Soils are very stable in the vicinity of the study site with little evidence of erosion. Hydrologic function is good, but the increase in snakeweed may be affecting infiltration and runoff. The site has many attributes of a Loamy site as indicated by the dominance of tobosa grass. For a Very Shallow site, tobosa is not listed as one of the grasses occurring on the ecosite. There has been a shift in composition throughout this area. Black grama is significantly reduced from expected. Snakeweed has increased over expected and tobosa grass dominates the composition.

Plant species encountered included:

shrubs: DAFO, GUSA2, GUMI, OPUNT (cholla), OPUNT (prickly pear), ECPE (rainbow cactus), MIAC forbs: Solanum spp. grasses: BOER, ARIST

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64029-GRANDE-E206			
Legal Land Desc	SESW 21 0080S 0210E Meridian 23	Acreage	1860
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y
Watershed	13060005060 MIDDLE		
Observers	JACKSON; DILLEY	Observation Date	04/19/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	ECC	Soil Taxon Name	ECTOR
Texture Class	NM644 CBV-L	Soil Phase	ECTOR- CONGER
Texture Modifier	NM644 VERY COBBLY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	A two-track road passes through the site. There is a water tank close by. Cattle are present in the pasture. Use (could be last season) on black grama is heavy.		
Part 2. Attributes and Indicators			
		Departure from Ecological Site Description/Ecological Reference Areas	

Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Some evidence of minor erosion. Some patches have flow patterns that are long and connected. Trending toward moderate.					
S H	Pedestals and/or Terracettes				X	
Comments:	Active pedesalling is occurring in shrubby areas. This is trending toward moderate.					
S H	Bare Ground					X
Comments:	Less than expected in the ESD (43%).					
S H	Gullies					X
Comments:	None observed on site.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Litter is being displaced by water and wind. It is noticeable in flow patterns.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	There is some erosion, but aggregates appear relatively stable.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some soil loss has occurred especially in interspaces.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	An increase in shrubs and half shrubs is affecting herbaceous cover which in turn affects runoff and infiltration.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Shrubs and half shrubs appear to be increasing. There is a shift in composition of grasses. Threeawns are becoming dominant. Black grama is still well represented.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X

Comments:	Exceeds expected.					
B	Annual Production					X
Comments:	Greater than 80% of potential.					
B	Invasive Plants				X	
Comments:	No "invasives" were noted, but the increase in "increaser" shrubs causes this to rate "slight to moderate".					
B	Reproductive Capability of Perennial Plants					X
Comments:	There was heavy use on black grama. We could not determine if this use was prior to seed set and maturation or after. Timing and intensity of grazing on desirable forage plants could be factor in their reduced numbers.					
S	Physical/Chemical/Biological Crusts					X
Comments:						
B	Wildlife Habitat					X
Comments:	Satisfactory habitat for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	4	6
H	Hydrologic	0	0	0	6	5
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized

values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with only minor signs of erosion, however, water flow patterns and pedestalling are evident.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic integrity is still high, but shrubs and half shrubs are increasing. Grass composition is shifting to a threeawn dominated community.	0	0	13

Site Notes: There is some evidence of soil movement and loss as indicated by flow patterns and pedestalling. Overall, the area is relatively stable.

Shrubs appear to be increasing. Snakeweed is higher than expected for the site and may be affecting total herbaceous cover.

There was heavy use on black grama.

Plant species encountered included:

shrubs: GUSA2, GUMI, MIAC, DAFO, OPUNT (prickly pear), EULA5 (winterfat), Eagleclaw cactus, forbs: prickly dogweed, ERBO (filaree), SPHAER (globemallow), grasses: BOER, ARIST, TRIDENS, SCBR, ERPU8

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64029-MARE-E204

Legal Land Desc	SESW 26 0080S 0210E Meridian 23	Acreage	480
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y
Watershed	13060005060 MIDDLE		
Observers	JACKSON; DILLEY	Observation Date	04/19/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	EaC	Soil Taxon Name	ECTOR
Texture Class	NM644 CBV-L	Soil Phase	ECTOR
Texture Modifier	NM644 VERY COBBLY LOAM		
Observed Avg		Observed Avg Growing	

Annual Precipitation		Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle were in the pasture at the time of the visit. Use was generally light, but moderate to heavy on black grama. Trailing was evident. A road passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Trending toward moderate. Connectivity and length of flow patterns may be increasing. There is evidence of erosion.					
S H	Pedestals and/or Terracettes			X		
Comments:	There is some active pedestalling particular on areas with greater slope.					
S H	Bare Ground					X
Comments:	Less than expected in the ESD. There is lots of surface rock.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Some displacement particularly in flow patterns.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	There is some reduction in resistance in the interspaces.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some soil loss has occurred as indicated by pedestalling particularly in interspaces.					

H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Herbaceous cover is somewhat less than expected. There is a significant increase in snakeweed over expected. This is trending toward "moderate".					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Shrubs and half shrubs are increasing. There is a shift in grass composition. Tridens and threeawns are becoming the dominant grasses. Black grama is still well represented in the composition but is significantly reduced from expected.					
B	Plant Mortality/Decadence					X
Comments:	Some mortality was observed in black grama.					
H B	Litter Amount					X
Comments:	Greater than expected.					
B	Annual Production					X
Comments:	Greater than 80% of potential. There were good late summer rains in 2006.					
B	Invasive Plants				X	
Comments:	Cholla is widely scattered throughout the area. Catclaw may be increasing and snakeweed is significantly higher than expected.					
B	Reproductive Capability of Perennial Plants					X
Comments:	It appears that all grasses were able to produce seed in 2006. However, the reduction in black grama suggests that this may not always be the case.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout the site but not continuous.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					
Part 3. Summary						

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	4	5
H	Hydrologic	0	0	1	5	5
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Most indicators rate "slight to moderate" or "none to slight", but the area is experiencing some soil loss as indicated by pedestalling and flow patterns.	0	1	9
Hydrologic		0	1	10
Biotic	Biotic integrity is satisfactory, but there is an increase in the shrubby component and a shift in grass composition from expected. The area is transitioning to a threeawn / Tridens grass - shrub mix.	0	0	13

Site Notes: There is some decline in soil stability as indicated by the presence of flow patterns and the "moderate" pedestalling. Several indicators for soil stability and hydrologic function were trending toward "moderate". There is an increase in snakeweed over what is expected for the site. This may be affecting infiltration and runoff. The area is well armored by surface rock.

In addition to the increase in shrubs and half shrubs, there has been a shift in composition in grasses. The area is becoming a threeawn / Tridens grassland instead of a black grama dominated grassland.

Plants encountered included: shrubs: GUSA2, GUMI, MIAC, rainbow cactus, DAFO forbs: SPHAE (globemallow) grasses: ARIST, TRIDENS, BOER, SCBR, ERPU8, SPCR

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64029-NORTH MILL-E207

Legal Land Desc	SENE 16 0080S 0210E Meridian 23	Acreage	1630
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y
Watershed	13060005060 MIDDLE		
Observers	JACKSON; DILLEY	Observation Date	04/19/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RDB	Soil Taxon Name	REAGAN
Texture Class	NM644 SIL	Soil Phase	REAGAN- CONGER
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	A water pipeline and road passes through the site. There are cattle trails passing through the site. There is grazing use on black grama.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	Occasional. Short and stable.					
S H	Pedestals and/or Terracettes			X		
Comments:	Pedestals and small terracettes are in bare, disturbed areas that have active erosion.					
S H	Bare Ground					X
Comments:	Less than expected in the ESD.					
S H	Gullies				X	
Comments:	Gullies are forming in association with cow trails. They are uncommon, but active.					
S	Wind-scoured, Blowouts, and/or					X

	Deposition Areas					
Comments:						
H	Litter Movement				X	
Comments:	There is some displacement.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Reduction in interspaces.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some soil loss in interspaces.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	There is a thick cover of tobosa grass. Herbaceous cover is higher than expected in the ESD.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	There is a significant shift in grass composition as compared with the ESD. Tobosa grass is by far the dominant grass. Blue grama is poorly represented. Black grama and sideoats grama are not in the composition.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Litter is near what is expected in the ESD.					
B	Annual Production					X
Comments:	Estimated to be greater than 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are widely scattered throughout the site.					
B	Reproductive Capability of Perennial Plants					X
Comments:	There were no apparent limitations observed, but the reduction and/or loss of desirable forage grasses suggests that this may have been a problem along with lack of fire.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout the site but continuity is broken.					
B	Wildlife Habitat					X

Comments:	Satisfactory for pronghorn antelope.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	1	6	4
B	Biotic	0	0	1	5	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils remain relatively stable, but soil loss has occurred as indicated by pedestalling.	0	1	9
Hydrologic		0	1	10
Biotic	Production is very good, but there has been a substantial change in grass composition from the ESD. Litter production was near expected.	0	1	12

Site Notes: Soils on this site remain relatively stable. There has been some soil loss as indicated by pedestalling and the formation of small terracettes, particularly in areas with less ground cover. Cow trails are forming gullies. The area is heavily dominated by tobosa grass with a significant reduction of various grama grasses.

Plants encountered included: shrubs: OPUNT (cholla, prickly pear), GUSA2 forbs: desert holly, verbena, Corydalis aurea, others grasses: HIMU, SCBR, BOER

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64029-SANDHILLS #1-F278

Legal Land Desc	SWSW 33 0080S 0210E Meridian 23	Acreage	340
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON, REBITZKI	Observation Date	04/20/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	HDA	Soil Taxon Name	HODGINS
Texture Class	NM644 SIL	Soil Phase	HODGINS- RANSTEIN
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle were in the pasture at the time of the visit. Use was generally light throughout and was mostly on blue grama. A two track road passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	Short and stable.					

S H	Pedestals and/or Terracettes				X	
Comments:	There is some pedestalling, particularly in flow patterns.					
S H	Bare Ground				X	
Comments:	Near expected.					
S H	Gullies					X
Comments:	None on sight.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Minimal movement. Fairly evenly distributed.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate aggregate stability.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some soil loss in interspaces.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Overall herbaceous ground cover is near expected, but it is not evenly distributed.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There has been a shift in the grass composition. This loamy site has very little tobosa grass. Blue grama is the dominant grass, but burrograss and threeaws appear to be increasing. Black grama is almost absent.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	As expected.					
B	Annual Production				X	
Comments:	60 - 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla is concentrated on what was probably an old sheep bedding area. There was none around the study plot.					
B	Reproductive Capability of Perennial Plants					X

Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn antelope and mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	6	4
H	Hydrologic	0	0	0	8	3
B	Biotic	0	0	0	7	6

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with no problem areas noted.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic integrity is relatively good. Production is good but not as high as expected for the site. Grass	0	0	13

	composition is good, but there has been a shift in composition. Black grama is lacking. Burrograss and threeawns appear to be increasing.			
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Site Notes: The area has some characteristics of a bottomland site. Tobosa grass is much less than expected for a loamy site. Blue grama is the dominant grass. There is good ground cover and the site is relatively stable.

Cholla on the site are probably associated with an old sheep bedding ground.

Plants encountered included:

shrubs: OPUNT (cholla) forbs: ASTER spp., ASTRA (locoweed), Verbena, CIRCIUM spp., bladderpod

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64029-SANDHILLS #2-F303

Legal Land Desc	SWNW 33 0080S 0210E Meridian 23	Acreage	340
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; REBITZKI	Observation Date	04/20/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	HDA	Soil Taxon Name	HODGINS
Texture Class	NM644 SIL	Soil Phase	HODGINS-RANSTEIN
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle were present at the site. Grazing use was light at the time of the visit. An old road passes through the site that is causing erosion problems.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas
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Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills, but there is sheet erosion.					
S H	Water Flow Patterns				X	
Comments:	Flow patterns are short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	Pedestals have formed and are forming in flow patterns.					
S H	Bare Ground				X	
Comments:	Bare ground is about what is expected in the ESD. The average is higher than expected.					
S H	Gullies					X
Comments:	None actually on site, but there is active gully formation in the nearby draw bottom that is associated with an old road.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	There is some displacement.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate aggregate stability. Some crusting.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some soil loss in flow patterns and bare spaces.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Herbaceous ground cover is somewhat higher than expected in the ESD.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Grass composition has changed. Tobosa grass is the dominant grass. Blue grama and black grama are still well represented.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X

Comments:	Equals or exceeds expected.					
B	Annual Production					X
Comments:	Estimated to be greater than 80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are widely scattered throughout the site. There are scattered juniper along the draw bottom and on the adjacent hillside. These were not regarded as being within this site.					
B	Reproductive Capability of Perennial Plants					X
Comments:	No apparent restrictions. Desirable grasses produced seed in 2006.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn antelope and mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	6	4
H	Hydrologic	0	0	0	6	5
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate

box for each attribute to denote final agreed upon determination by the ID team.				
Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils remain relatively stable. There has been some soil loss as indicated by pedestalling.	0	0	10
Hydrologic		0	0	11
Biotic	Production is good. Litter amount is good. There has been a shift on grass composition from the ESD. Tobosa is the dominant grass, but blue and black grama are still reasonably well represented in the composition.	0	0	13
<p>Site Notes: Soils are relatively stable, but there has been some soil loss as indicated by pedestalling. The site is dominated by tobosa grass. Blue and Black grama are still reasonably represented in the composition.</p> <p>The adjacent draw has some active cutting associated with an old road. It also shows signs of stabilizing.</p> <p>Plants encountered included: shrubs: GUSA2, OPUNT (cholla, prickly pear) forbs: verbena, bladderpod, desert holly, SPHAER (globemallow) grasses: BOGR2, BOER, HIMU, SPAI, PAOB, ARIST</p>				

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64029-SW-F279			
Legal Land Desc	SENW 11 0090S 0210E Meridian 23	Acreage	1165
Ecosite	070BY075NM SHALLOW CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON; REBITZKI	Observation Date	04/19/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 L	Soil Phase	CONGER-REAGAN
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual	10.63	NOAA Growing Season	8.18

Precipitation		Precipitation	
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Light use overall with moderate to heavy use on sideoats; light use on blue grama; heavy use on New Mexico feathergrass (STNE2). Cow trails pass and through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills				X	
Comments:	Cow trails in the area are forming rills. Otherwise, no rills.					
S H	Water Flow Patterns				X	
Comments:	Flow patterns are evident. This could be moderate.					
S H	Pedestals and/or Terracettes			X		
Comments:	Pedestals are frequent in flow patterns. Mini terracettes are noticeable in flow patterns. The site appears to stabilizing after severe drought.					
S H	Bare Ground				X	
Comments:	No large open patches. Percent bare ground is within the expected range.					
S H	Gullies				X	
Comments:	None in the immediate vicinity of the study plot, but gullies are beginning to form nearby due to cow trails.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Litter is fairly uniform, but past displacement is evident.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate soil aggregate stability. There is some reduction throughout.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There has been soil loss as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X

Comments:	Herbaceous ground cover exceeds the expected amount.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There is an increase in shrubs and half shrubs over expected. There is a shift in grass composition from expected. Black grama and other gramas are still well represented, but threeawns are much higher than expected.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Higher than expected in the ESD.					
B	Annual Production					X
Comments:	Good production in 2006. Exceeds 80% of potential.					
B	Invasive Plants				X	
Comments:	There are no truly invasive plants, however, snakeweed is increasing. Beargrass (NOLIN) appears to be increasing. Cholla are relatively rare.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desirable grasses produced seed in 2006.					
S	Physical/Chemical/Biological Crusts			X		
Comments:	Biotic crusts are mostly in protected areas.					
B	Wildlife Habitat					X
Comments:	Satisfactory for antelope.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					
Part 3. Summary						
A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.						
Standard Attribute		Extreme	Moderate to	Moderate	Slight to Moderate	None to

			Extreme			Slight
S	Soil	0	0	2	6	2
H	Hydrologic	0	0	1	7	3
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	There is some instability and soil loss at the site as indicated by pedestalling. Water flow patterns may be stabilizing. The area appears to be recovering.	0	2	8
Hydrologic		0	1	10
Biotic	Production is good. Species diversity is fairly good. Black grama and other gramas are still well represented in the composition, but threeawns are higher than expected.	0	0	13

Site Notes: Soils are relatively stable. There has been some sheet erosion. The site appears to be recovering from severe drought. Erosion will continue as the site recovers. Plants were vigorous. Beargrass and catclaw appear to be increasing.

Plants encountered included:

shrubs: MIAC, OPUNT (cholla and prickly pear), yucca, GUSA2 forbs: verbena, Allium, Circium spp., several unk. forbs grasses: BOER, BOGR2, BOCU, ARIST, ARPU, TRPI, SCSC, PLMU3

RFOs Upland and Biotic Standard Assessment Summary Worksheet			
SITE 64029-WILL JOHNSON-E202			
Legal Land Desc	SENW 34 0070S 0210E Meridian 23	Acreage	4590
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; BRITTON	Observation Date	03/21/2007
County Soil Survey	NM644 CHAVES	Soil Var/Taxad	

	NORTH		
Soil Map Unit	RDB	Soil Taxon Name	REAGAN
Texture Class	NM644 L	Soil Phase	REAGAN-CONGER
Texture Modifier	NM644 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.63	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	The area had been lightly grazed. Moderate use was on black grama. A gas pipeline passes through the site.		

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:						
S H	Water Flow Patterns				X	
Comments:	Flow patterns are short and stable. There is evidence of erosion.					
S H	Pedestals and/or Terracettes			X		
Comments:	There is active pedestalling occurring in flow paths, interspaces and exposed areas. No terracettes.					
S H	Bare Ground				X	
Comments:	Bare ground is within the expected range. The average approaches the upper range expected, but recent years are below expected.					
S H	Gullies					X
Comments:	None on site, but there is a gully west of the study site that is the result of an old road.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	There is some litter displacement by water and wind.					

S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate soil aggregate stability in interspaces. This is trending toward moderate.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Soil loss has occurred as indicated by pedestalling.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Patchy bare areas are affecting infiltration and runoff. Total herbaceous ground cover is somewhat less than expected.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There is still a good mix of grasses, but burrograss has increased and gramas are much reduced from expected. Forbs are below expected levels.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Falls within expected range for the ESD.					
B	Annual Production			X		
Comments:	Late growing season precip was higher than average in 2006. Production is estimated to be between 40 and 60% of potential.					
B	Invasive Plants					X
Comments:	Rarely present on site.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Grasses were able to produce seed in 2006.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout the site but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and pronghorn antelope.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species					X

	Populations					
Comments:	N/A					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	1	7	3
B	Biotic	0	0	1	5	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are still relatively stable. Sheet erosion is evident by the amount pedestalling.	0	1	9
Hydrologic		0	1	10
Biotic	There is still relatively good species diversity, but there has been a reduction in blue and black grama from the expected levels. Annual production is higher than average but only 40 - 60% of potential for a Loamy CP-2. Litter is within the expected range.	0	1	12

Site Notes: There is no longer any road access to this study site. The old road is now a gully. Terrain is gently sloping and rolling. Soil loss through sheet erosion is evident by the amount of pedestalling. Bare ground is within the expected range but is approaching the high end. Bare areas are contributing to increased runoff and reduced infiltration. Species diversity is still relatively good, but the area is no longer dominated by blue and black grama as expected for the site. Threeawns are about equal to gramas in the composition and burrograss appears to be increasing.

Plant species encountered included: shrubs: prickly pear forbs: ERPU8, dogweed, pussytoes, ASTRA (locoweed), dwarf desert holly, grasses: BOGR2, BOER, ARIST, SCBR, MUAR

Determination of Public Land (Rangeland) Health for 64029 WILL JOHNSON TANK

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within Will Johnson Tank, allotment #64029 meets the (1) Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered, and Special Status Species standard. There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

/s/ EDDIE BATESON

Assistant Field Manager

08/24/2007

Date